

REMARKS

Status of the Claims

Claims 1-36 were presented for examination in this application, including independent claims 1, 6, 8, 27, 29 and 33. Applicants note with appreciation that, in the instant Office Action, the Restriction Requirement issued on February 25, 2005 has been reconsidered and withdrawn.

All pending claims stand rejected as follows:

- Claims 1, 6, 8, 27, 29 and 33 under 35 U.S.C. § 112, second paragraph as being incomplete for omitting allegedly essential elements;
- Claims 1-5, 6-7, 8-26, 27-28 and 29-31 under 35 U.S.C. § 102(e) as allegedly being anticipated by United States Patent No. 6,167,045 to Pirovano et al. ("Pirovano");
- Claims 17, 22, 25, and 32 under U.S.C. § 103(a) as allegedly being unpatentable in view of Pirovano, and in further view of U.S. Patent No. 6,640,305 to Kocher et al. ("Kocher");
- Claims 33, 35 and 36 under U.S.C. § 103(a) as allegedly being unpatentable in view of Pirovano, and in further view of U.S. Patent No. 5,856,974 to Gervais et al. ("Gervais"); and
- Claim 34 under U.S.C. § 103(a) as allegedly being unpatentable in view of Pirovano, and in further view of Gervais and U.S. Patent No. 6,167,438 to Yates et al. ("Yates").

In addition, claims 1, 6, 8, 27, 29, and 33 are objected to because of certain perceived informalities therein.

Claim Amendments

Applicants thank Examiner Vu for his time and courtesy extended during telephonic interviews on August 1, 2005 and August 2, 2005 with the undersigned attorney and his colleague, Joel Lehrer, and for the helpful suggestions with respect to claim amendments. The following discussion is intended to constitute a proper recordation of these interviews in accordance with MPEP §713.04, and also to provide a full response to the Office Action.

Both the August 1, 2005 and August 2, 2005 discussions focused on the claims, primarily on the matters of form, as well as on differences between the present invention and Pirovano. Consistent with these discussions, Applicants have amended claims 1-36 to more fully characterize and more particularly define the subject matter they regard as their invention, and note that, as discussed during the interviews and in more detail below, Pirovano, or any other reference of record, either alone or in proper combination, does not teach or suggest the inventions defined by the amended claims.

No new matter has been introduced by these amendments, support therefor being found throughout the specification, as well as in claims 1-36, as originally filed.

Abstract of the Disclosure

Applicants have amended the Abstract to more clearly describe the technical disclosure of the invention, and respectfully submit that the amended Abstract duly complies with 37 C.F.R. 1.72 and MPEP 608.01(b). Reconsideration and withdrawal of the objection to the Abstract is respectfully requested.

Applicants note that, as discussed during the August 2, 2005 interview, encrypting routing message information is not the “key of invention,” but rather relates to some of the embodiments thereof.

Claim Objections

The Office Action, on page 3, objected to claims 8 and 29, alleging insufficient antecedent basis for the “splitting” step of the claimed method. Applicants thank the Examiner for clarifying the objection during the August 2, 2005 interview and for his helpful suggestions regarding claim amendments. Applicants have amended claims 8 and 29 consistent with the discussion during the interview and respectfully submit that these claims, as amended, recite proper antecedent basis for each of the limitation thereof.

Further, independent claims 1, 6, 8, 27, 29 and 33 were also objected to for including inconsistent limitations. Applicants respectfully traverse this objection. As discussed and agreed

during the August 2, 2005 interview, the claims, as amended, are directed to distinct aspects of the invention and do not include inconsistent limitations.

Reconsideration and withdrawal of the objection to claims 1, 6, 8, 27, 29 and 33 is respectfully requested.

Claim Rejections under 35 USC § 112

Claims 1, 6 and 8 stand rejected under 35 USC § 112, second paragraph, as being incomplete for omitting essential elements of the invention. Applicants respectfully traverse this rejection. As explained in the specification at, for example, paragraph [0093] and paragraph [0100], as well as discussed and agreed during the August 1, 2005 and August 2 interviews, encoding and encrypting steps are in fact not essential elements of the invention, but merely relate to some possible implementations or aspects of the invention. In addition, disguising or “camouflaging” file traffic pattern relates to the intended purpose or results from implementation of various embodiments of the invention, rather than constituting an essential element thereof. Reconsideration and withdrawal of the objection to claims 1, 6, and 8 is respectfully requested.

Claim Rejections under 35 USC § 102(e)

Claims 1-32 stand rejected under 35 U.S.C. §102(e) as being anticipated by Pirovano. Applicants respectfully traverse this rejection to the extent it is maintained over the claims as amended, for at least the reasons provided below.

For anticipation under 35 U.S.C. §102(e), the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. See M.P.E.P. §706.02. Applicants respectfully submit that Pirovano fails to meet this exacting standard with respect to claims 1-32.

Briefly, Pirovano appears to disclose a method of receiving data over a broadcasting channel using variable-length messages where the variable-length messages are further split into data packets. Each of the data packets includes two identifiers, one identifying the source of the transmission and another identifying the message itself. Further, some of the packets may also include a third identifier that identifies the data receiver. Each of the data receivers maintains a

list of data sources from which it is authorized to receive data, and upon receipt of a data packet retrieves the two (or, in some cases three) identifiers. The identifiers are then used to validate the data as being sent from an authorized source, and if so, making the data available to users of the data receiver. See Pirovano, col. 2, lines 22-42.

Assigning identifiers to data packets as described by Pirovano creates an absolute association between a given data packet, its source, and the data receiver to which it is being transmitted. Such an absolute association is in direct contrast to the scope and purpose of Applicants' claimed invention, as discussed in detail below.

Independent Claims 1 and 8

Independent claim 1, as amended, recites an apparatus that includes "a file-splitting processor for splitting a file into a plurality of message segments and assigning one of a plurality of destination addresses to each segment, the plurality of destination addresses being assigned to a receiving host." Also, claim 8, as amended, recites a method that includes "splitting the file into a plurality of message segments," and addressing "each message segment of the plurality of message segments using one of a plurality of destination addresses assigned to a receiving host."

Thus, Applicants' invention assigns multiple destination addresses to file segments that are being sent to the same destination host. As a result, individual file segments do not carry enough information to permit one intercepting a subset of the packets to determine which packets belong to any particular file without knowing which destination addresses represent the same receiving host. Pirovano simply does not teach or suggest this approach or the above claim limitations. Instead, in contrast to Applicants' claims 1 and 8, in Pirovano, each packet explicitly includes the source identifier, message identifier, and in some cases, a destination identifier.

Accordingly, because Pirovano does not teach or suggest every element of independent claims 1 and 8, as amended, Applicants respectfully submit that Pirovano fails to anticipate these independent claims. Without acquiescing to the rejection of claims 2-5 and 9-26, Applicants note that these claims depend directly from either claim 1 or claim 8, as amended, and include all

the limitations thereof, and thus, are also patentable. Reconsideration and withdrawal of the rejection of claims 1-5 and 8-26 under 35 U.S.C. §102(e) is respectfully requested.

Independent Claims 6 and 27

Claims 6, 7, 27 and 28 were also rejected under 35 U.S.C. §102(e) as being anticipated by Pirovano. As described above, Pirovano describes a system for unidirectional data transmission using absolute and unique identifiers assigned to each data packet. Independent claims 6 and 27, as amended, both recite “splitting a file into a plurality of message segments” and “assigning one of a plurality of source addresses to each message segment.” Pirovano, however, does not teach or suggest the above limitations. Again, unlike the system described by Pirovano, Applicants’ invention assigns one of multiple addresses representing the source host to each file segment of a split file. As a result, similarly to claims 1 and 8, individual file segments do not carry enough information to permit one intercepting a subset of the packets to determine which packets belong to any particular file or the host from which they originated. Thus, in contrast to Pirovano, the file segments are transmitted in a different and substantially more secure manner.

Accordingly, because Pirovano does not teach or suggest every element of independent claims 6 and 27, as amended, Applicants respectfully submit that Pirovano fails to anticipate these independent claims. Without acquiescing to the rejection of claims 7 and 28, Applicants note that these claims depend directly from claim 6 and 27, as amended, respectively, and include all the limitations thereof, and thus, are also patentable. Reconsideration and withdrawal of the rejection of claims 6, 7, 27 and 28 under 35 U.S.C. §102(e) is respectfully requested.

Independent Claim 29

Claims 29 also stands rejected under 35 U.S.C. §102(e) as being anticipated by Pirovano. Claim 29, as amended, recites “receiving a message segment at a receiving host” where the “message segment comprises . . . encrypted message data,” “decrypting the message data to determine a destination host,” “encrypting the message data in accordance with an encryption protocol accessible to the destination host” and “transmitting the encrypted message to the destination host.” Pirovano does not teach or suggest the above limitations. As mentioned above, Pirovano describes a transmission system that transmits data packets to receiving

addresses using explicitly assigned source and destination addresses. While Pirovano mentions sending a checksum value with each packet, the checksum is not used for encryption, but rather to check for errors internal to the packet itself. Furthermore, Pirovano does not contemplate using a receiving host as an intermediary that can decrypt a message to determine its ultimate destination, and re-encrypt the segment for further transmission to the destination host. The only mention of retransmission in Pirovano relates to retransmitting a packet from the same source to the same receiver to compensate for lost packets.

Accordingly, because Pirovano does not teach or suggest every element of independent claim 29, as amended, Applicants respectfully submit that Pirovano fails to anticipate this independent claim. Without acquiescing to the rejection of claims 30-32, Applicants note that these claims depend directly from claim 29, as amended, respectively, and include all the limitations thereof, and thus, are also patentable. Reconsideration and withdrawal of the rejection of claims 29-32 under 35 U.S.C. § 102(e) is respectfully requested.

Claim Rejections under 35 USC § 103(a)

Dependent claims 17, 22 25, and 32 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pirovano in view of Kocher. Also, independent claim 33 and claims 35-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pirovano in view of Gervais. Finally, dependent claim 34 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pirovano in view of Gervais and Yates. Applicants respectfully traverse these rejections for at least the reasons provided below.

It is well settled that establishing obviousness requires a showing that the prior art provides every limitation of a claim and the invention as a whole. See M.P.E.P. §§ 2142, 2143. As a result, a reference, or combination of references, that does not teach or fairly suggest the invention as a whole cannot render that claim obvious. See, e.g., M.P.E.P. § 2141.02. Also, to modify or combine references, there must be some suggestion or motivation to do so in the reference itself or in the knowledge generally available to one of ordinary skill in the art that lies

outside the disclosure of the patent application. See, e.g., M.P.E.P. §2142. Absent this motivation, a rejection under 35 U.S.C. § 103(a) is improper.

Claims 17, 22, 25 and 32

Without acquiescing to the rejection of claims 17, 22, 25, and 32, Applicants note that these claims depend directly or indirectly from independent claims 8 or 29, and include all the limitations thereof. Therefore, Applicants submit that these claims are patentable for at least the reasons independent claims 8 and 29, as amended, are patentable.

Furthermore, Kocher does not cure the deficiencies of Pirovano, discussed above. Specifically, Kocher does not teach or suggest splitting files into message segments in order to assign multiple source or destination addresses to message segments that are being sent to the same destination host in order to enhance security of the transmission.

Applicants note that claim 32, which depends from claim 29 includes all the limitations thereof, also recites, in part, “adding status information concerning the receiving host to the message segment” and “interpreting the status information to detect tampering with the message segment transmission.” Unlike the system described by Kocher, which uses encryption and keys to protect the digital content itself by storing it at a secure device, Applicants’ invention is directed to securing the transmission itself by concealing the routing information assigned to individual message segments that comprise the file. More specifically, Kocher employs host-based encryption and user-supplied keys to control access to digitally stored content, but does not teach or suggest using a receiving host to decrypt and subsequently re-encrypt transmission data, such that the message can be securely forwarded to its proper destination host.

In light of the foregoing, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on Pirovano and Kocher are respectfully requested.

Independent Claim 33

Claim 33, as amended, recites “assigning each host of a plurality of hosts to a first domain of a plurality of domains” and “restricting network traffic to message transmissions

among hosts within the same domain or neighboring domains.” Neither Pirovano nor Gervais teaches or suggests these limitations.

Briefly, Gervais appears to describe an address-mapping gateway that associates a globally unique domain network address with each node within a domain and with associated node addresses that are unique within the domain. To resolve source and destination addressing within the domain, the gateway maintains an address-mapping table that provides a cross-reference between a source node address and the network number of the local network in which the node resides, and a gateway-mapped node address generated by the address-mapping gateway.

While Gervais may contemplate using locally unique addresses for message transmission to avoid duplicate addresses within the network and to increase routing efficiency, Gervais does not describe limiting message routing to local or neighboring domains to “camouflage network sources and destinations” as recited in claim 33. In fact, Gervais describes domains that are “accessible through multiple address mapping gateways” that “advertise to the backbone that it can provide access to all nodes having the globally-unique domain network address as the network number.” Gervais goes on to state that “just as any packet generated by a node in the domain may pass through any of the available address mapping gateways, a packet destined for a node within the domain may also return via any of the available address mapping gateways.” See Gervais, col. 11 line 63 to col. 12 line 4.

In light of the foregoing, reconsideration and withdrawal of the rejections of independent claim 33 and claims 35-36 dependent therefrom under 35 U.S.C. §103(a) based on Pirovano and Gervais are respectfully requested.

Claim 34

Dependent claim 34 stands rejected under 35 U.S.C. §103(a) as being unpatentable in view of Pirovano, in further view of Gervais and Yates. Applicants respectfully submit that Yates fails to cure the deficiencies noted above with respect to Pirovano and Gervais. Yates describes a caching approach for use in a computer network that builds virtual routing paths

based on client requests for particular documents that reside on servers within the network. Client requests are routed up the graph towards the home server as would normally occur in the absence of caching. However, cache servers are located along the route and insert a packet filter into the router associated with the cache server. The servers act as proxies for the home server from the perspective of the client, and may cooperate to service client requests by caching and discarding documents based on individual loads and on the popularity of the requested documents.

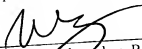
Yates does not describe limiting message routing to local or neighboring domains to "camouflage network sources and destinations" as recited in independent claim 33, from which claim 34 depends. In fact, unlike Applicants' invention, which attempts to conceal message paths from detection based on novel routing techniques, Yates relies on the ability to detect the various message paths to determine where the caching servers should be placed within the network.

In light of the foregoing, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on Pirovano, Gervais and Yates are respectfully requested.

CONCLUSION

Applicants respectfully submit that, in light of the foregoing remarks, claims 1-36 are in condition for allowance, and request that application proceed to issue. If, in the Examiner's opinion, another telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,



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